

**IN THE CLAIMS:**

*Please cancel claims 1, 6-11, 13-14, 16-17, 19-20, 22-23, 28-30 and 35-36 as follows.*

*Please amend claims 2-5, 12, 15, 18, 21, 24-27 and 32-34 as follows.*

*Please add new claims 37-47 as follows.*

1. (Cancelled)
2. (Currently Amended) ~~Light wave converter assembly~~ The system, as claimed in claim ~~1~~ 32, wherein the incident light exhibits a wavelength ranging from 380 to 520 nm.
3. (Currently Amended) ~~Light wave converter assembly~~ The system, as claimed in claim ~~1~~ 32, further comprising a band pass filter.
4. (Currently Amended) ~~Light wave converter assembly~~ The system, as claimed in claim 2, further comprising a band pass filter.
5. (Currently Amended) ~~Light wave converter assembly~~ The system, as claimed in claim ~~1~~ 32, comprising a brightness controller.
- 6-11. (Cancelled)

12. (Currently Amended) ~~Light wave converter assembly~~ The system, as claimed in claim 4 32, wherein the converter substance is chosen from substances, which, when optically excited, can luminescence.

13-14. (Cancelled)

15. (Currently Amended) ~~Light wave converter assembly~~ The system, as claimed in claim 4 32, wherein the converter substance is at least one of inorganic dyes, including the auxiliary group elements and elements from the group of lanthanides, and organic dyes, including the class of perylenes, aldazines, thioxanthenes and/or naphthalimides.

16-17. (Cancelled)

18. (Currently Amended) ~~Light wave converter assembly~~ The system, as claimed in claim 4 32, wherein the light guide is flexible.

19-20. (Cancelled)

21. (Currently Amended) ~~Light wave converter assembly~~ The system, as claimed in claim 4 32, wherein the diameter of the exit port ranges from 1 to 10 mm.

22-23. (Cancelled)

24. (Currently Amended) ~~Light wave converter assembly~~ The system,  
as claimed in claim 1 ~~32~~, including a coupling or a thread.

25. (Currently Amended) ~~Light wave converter assembly~~ The system,  
as claimed in claim 1, ~~32~~ wherein the converter substance is present in a quantity  
ranging from 0.005 to 5% by weight, based on a substance to be dyed.

26. (Currently Amended) ~~Light wave converter assembly~~ The system,  
as claimed in claim 1 ~~32~~, wherein the converter assembly is a hot steam sterilized  
converter assembly.

27. (Currently Amended) ~~Light wave converter assembly~~ The system,  
as claimed in claim 1 ~~32~~, wherein the light wave converter exhibits one of a form of  
a filter disk, a glass fiber or a glass rod.

28-30. (Cancelled)

31. (Original) Process, comprising the steps: a) provision of a light wave converter assembly, comprising a light guide and a light wave converter, wherein the light wave converter exhibits a converter substance, which in use converts a part of incident light into light of a longer wavelength, and wherein the converted light is guided together with a portion of the unconverted light to an exit port, and b) connection of the light wave converter to a polymerization device, c) at least one of illumination and transillumination of hard tooth substance with light which is generated by the polymerization device and is converted by the light wave converter.

32. (Currently Amended) A dental ~~photopolymerization~~ illumination or transillumination system, comprising a photopolymerization system and a light wave converter assembly with a light guide and a light wave converter,

wherein the light wave converter exhibits a converter substance operable to convert a part of incident light into light of a longer wavelength, whereby the converted light is guided together with a portion of the unconverted light to an exit port; and the light, converted by the converter substance, together with the unconverted light yields a light with the wavelength spectrum of the color white in order to illuminate hard tooth substances.

33. (Currently Amended) ~~A photopolymerization~~ The illumination or transillumination system according to claim 32,

wherein the incident light exhibits a wavelength ranging from 380 to 520 nm.

34. (Currently Amended) ~~A photopolymerization~~ The illumination or transillumination system according to claim ~~33~~ 32, wherein the incident light is generated by a polymerization lamp as a light source.

35-36. (Cancelled)

37. (New) The process according to claim 31, wherein the incident light exhibits a wavelength ranging from 380 to 520 nm..

38. (New) The process according to claim 31, further comprising a band pass filter.

39. (New) The process according to claim 31, comprising a brightness controller.

40. (New) The process according to claim 31, wherein the converter substance is chosen from substances, which, when optically excited, can luminescence.

41. (New) The process according to claim 31, wherein the converter substance is at least one of inorganic dyes, including the auxiliary group elements and elements from the group of lanthanides, and organic dyes, including the class of perylenes, aldazines, thioxanthenes and/or naphthalimides.

42. (New) The process according to claim 31, wherein the light guide is flexible.

43. (New) The process according to claim 31, wherein the diameter of the exit port ranges from 1 to 10 mm.

44. (New) The process according to claim 31, including a coupling or a thread.

45. (New) The process according to claim 31, wherein the converter substance is present in a quantity ranging from 0.0005 to 5% by weight, based on a substance to be dyed.

46. (New) The process according to claim 31, wherein the converter assembly is a hot stream sterilized converter assembly.

47. (New) The process according to claim 31, wherein the light wave converter exhibits one of a form of a filter disk, a glass fiber or a glass rod.